

Modal operator

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A **modal operator** is a logical connective, in the language of a modal logic, which forms propositions from propositions. In general, a modal operator is *formally* characterised by being non-truth-functional, and *intuitively* characterised by expressing a modal attitude (such as necessity, possibility, belief, or knowledge) towards the proposition which it is applied to.

Examples

- In the alethic modal logic of C.I. Lewis, the modal operator \Box expresses necessity: if the proposition A is read as "it is true that A holds", the proposition $\Box A$ is read as "it is *necessarily* true that A holds".
- In the tense logic (more commonly now called temporal logic) of A.N. Prior, the proposition A is read as " A is true at the present time"; $F A$, as " A will be true at some time in the future"; and $G A$, as " A is true now and will always be true".
- The previous two examples are of unary or monadic modal operators. As an example of a dyadic modal operator -- which produces a new proposition from *two* old propositions -- is the operator P in the dyadic deontic logic of G.H. von Wright. $P(A,B)$ expresses that " A is obligatory under the circumstances B ".

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